

REMARKS

Entry of the foregoing amendments and reconsideration of the above-identified application are respectfully requested in view of the remarks that follow.

I. Status of Claims:

Claims 1-9 and 12-23 are currently pending. Of the foregoing, claims 1-6, 13-18, 20, 21 and 23 have been withdrawn from consideration pursuant to 37 C.F.R. 1.142(b). By this response, claims 7, 19 and 22 have been amended. No new matter has been introduced.

It is respectfully noted that the "Disposition of Claims" in the *Office Action Summary* section of the currently outstanding Office Action appears to be inconsistent with the file prosecution history of the present application. Specifically, in the "Disposition of Claims" under the *Office Action Summary* section of the currently outstanding Office Action, claims 1-23 are indicated as "pending in the application, and claims 1-6, **10, 11**, 13-18, 20, 21 and 23 are indicated as "withdrawn from consideration". (See, *Office Action Summary*, at item 4).

Applicants note that claim 11 was cancelled, without prejudice or disclaimer, by Applicants' submission dated 9/22/2008; and claim 10 was cancelled, without prejudice or disclaimer, by Applicants' submission dated 3/06/2009.

In view of the above inconsistencies, appropriate correction of the "Disposition of Claims" is respectfully requested.

II. Rejection Under 35 U.S.C. §112:

Claims 7-9, 12, 19 and 22 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite due to stated informalities. See, Office Action, page 2, item 2.

In response, Applicants have amended the subject claims, as set forth above. In particular, independent claims 7, 19 and 22 have been amended to address the noted informalities.

In view of the above amendments, withdrawal of the rejection under 35 U.S.C. § 112 is respectfully requested.

III. Rejection Under 35 U.S.C. §103:

Claims 7-9, 12, 19 and 22 have been rejected under 35 U.S.C. §103(a) as being unpatentable over patent application publication No.: US 2001/0040700 to Hannuksela *et al.*, (hereafter “Hannuksela”) in view of patent application publication US 2003/0086622 to Gunnewiek *et al.*, (hereafter “Gunnewiek”) and further in view of patent application publication No.: US 2003/0156198 to Hung-Ju Lee (hereafter “Lee”).

In the interest of expediting prosecution, Applicants have amended the pending claims, as set forth above. In particular, independent claim 7 has been amended to recite that the “pseudo-coded reference image data is used to correct a frame of image data encoded by the second coding unit in a case where the frame of image data encoded by the second coding unit cannot be decoded in a decoding process”. Independent claims 19 and 22 have been amended in similar terms. Support for the amendatory language can be found, for example, in paragraphs [0047], [0085], and [0158-0159] of the specification, as originally filed. Thus, no new matter has been introduced. Applicants are not conceding that the subject matter recited in the subject claims, prior to this submission, is not patentable. Rather, claims 7, 19 and 22 have been amended for purposes of clarification only.

As amended herein, independent claim 7 is directed to an image processing apparatus comprising, *inter alia*, “a pseudo-coded reference image data generating unit configured to generate pseudo-coded reference image data by limiting the frequency components obtained by the transforming of the input image data in the first coding unit, wherein said pseudo-coded reference image data is used to correct a frame of image data encoded by the second coding unit in a case where the frame of image data encoded by the second coding unit cannot be decoded in a decoding process”.

In accordance with at least one embodiment of the present invention, coded data for one frame (hereinafter referred to as “pseudo-coded reference data”) is obtained. The pseudo-coded reference data is obtained such that direct current (DC) components and some of alternating current (AC) components of discrete cosine transform (DCT) coefficients are coded as effective components (AC components other than the some of the AC components of the DCT coefficients are regarded as zeroes). The coefficients are obtained by dividing an I frame (frame

which is intraframe-coded (intra-coded)) into blocks and performing DCT processing on the blocks. The image coding apparatus 2 accumulates the pseudo-coded reference data in a memory. The image coding apparatus 2 stores the pseudo-coded reference data in a user data area for a P frame (frame which is interframe-coded (inter-coded)) in an MPEG-4 stream. Accordingly, when a reference frame for a P frame is lost due to some accident occurring in data transmission from the image coding apparatus 2 to an image decoding apparatus, by using, as a reference frame, a frame obtained from the pseudo-coded reference data combined with stream data of the P frame, the P frame is decoded. (See, e.g., ¶ [0047]). More specifically, if a normal reference frame is lost, the image decoding apparatus can perform decoding on the coded data of the P frame by referring to the image data (image data obtained by decoding the pseudo-coded reference data) stored in the frame memory. (See, ¶ [0085]).

The merits of the Hannuksela, Gunnewiek and Lee references have been addressed by Applicants in the responses to previous Office Actions. See, for example, pages 13-15 of the amendment filed 8/22/2008, pages 11-13 of the amendment filed 3/06/2009, and pages 12-14 of amendment filed 8/20/2009. Applicants incorporate herein by reference those remarks, and continue to maintain that the combination of references does not disclose or suggested each and every feature as a whole as set forth in Applicants' claims. In particular, Applicants maintain that all of Hannuksela, Gunnewiek and Lee—alone or in combination—fail to disclose or suggest how “to generate pseudo-coded reference image data”, where the pseudo-coded reference image data is generated “by limiting the frequency components obtained by the transforming of the input image data in the first coding unit”, as described in, for example, paragraphs [0055-0056] and [0064-0065].

In the Office Action, the Examiner asserts that “Hannuksela does indicate the need of spare reference picture for the intercoding mode” (Office Action, page 5), but concedes that “Hannuksela does not explicitly disclose the spare reference picture, i.e., pseudo-coded reference data, with frequency components and the switching unit for the intercoding mode. Furthermore, Hannuksela does not explicitly teach the frequency limitation.” *Id.*

In addition, Applicants respectfully note that Hannuksela merely teaches a “spare reference picture number” in paragraphs [0019]-[0020], and discloses that the bit stream includes

a codeword SRPN in Fig. 7. The SRPN disclosed in Hannuksela is supplemental information indicating the number of the reference picture. Therefore, it would be unreasonable to assert that the feature of claim 1 of “storing the pseudo-coded reference image data outputted by the switching unit into a user data area in a video plane object in a stream of the image data” is equivalent to the SRPN feature of Hannuksela. That is, the claimed pseudo-coded reference image data of claim 7, which is generated “by limiting the frequency components obtained by the transforming of the input image data in the first coding unit”, is not equivalent to the spare reference picture number (SRPN) of Hannuksela. Accordingly, Applicants submit that Hannuksela fails to disclose or suggest “storing the pseudo-coded reference image data outputted by the switching unit into a user data area in a video plane object in a stream of the image data”, as recited in amended claim 7.

Moreover, Applicants further respectfully submit that Hannuksela does not disclose or suggest “wherein said pseudo-coded reference image data is used to correct a frame of image data encoded by the second coding unit in a case where the frame of image data encoded by the second coding unit cannot be decoded in a decoding process”, as recited in amended claim 7.

The other cited and applied references, i.e., Gunnewiek and Lee do not cure the above-described deficiencies of the Hannuksela reference. As described above, the cited and applied references, taken either alone or in combination, do not teach or suggest all of the features as set forth in amended claim 7. Thus, amended claim 7 is not rendered obvious by the cited and applied references, and it is believed to be allowable over those references. Independent claims 19 and 22, as amended herein, include features similar to those of amended claim 7 and are believed allowable for at least the same reasons applied to claim 7.

Because each independent claim 7, 19 and 22 is believed allowable, all of the claims depending thereupon, i.e., claims 8-9 and 12, are also believed allowable for at least the same reasons as discussed above with reference to the independent claims. Furthermore, each dependent claim is also deemed to define additional aspects of the invention, and individual consideration of each claim on its own merits is respectfully requested.

CONCLUSION

Applicants respectfully submit that all of the claims pending in the application meet the requirements for patentability and respectfully request that the Examiner indicate the allowance of such claims. Any amendments to the claims which have been made in this response which have not been specifically noted to overcome a rejection based upon prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to apply thereto.

Should the Examiner have any questions or suggestions for expediting the prosecution of the present application, the Examiner is invited to contact Applicants' representative at the telephone number listed below.

AUTHORIZATION

The Commissioner is hereby authorized to charge any additional fees which may be required for consideration of this Document to Deposit Account No. **502456**.

In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. **502456**.

Respectfully submitted,

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